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मानक

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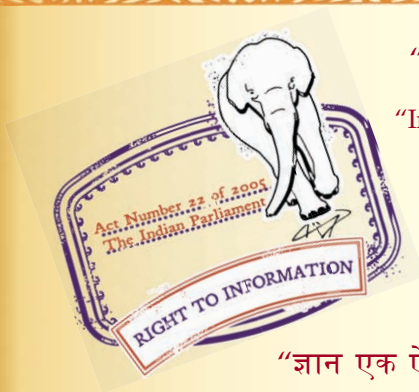
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IS 6704 (1992): Pigmented floor polish, paste [CHD 23: Lac, Lac Products and Polishes]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
वर्णकदार फर्श-पालिश, पेस्ट — विशिष्ट
(पहला पुनरीक्षण)

Indian Standard

**PIGMENTED FLOOR POLISH, PASTE –
SPECIFICATION**

(*First Revision*)

UDC 667.82.12 :648.523

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Polish Sectional Committee had been approved by the Chemical Division Council.

Pigmented floor polishes are being used in large quantities in homes, public buildings (including hotels, restaurants, hospitals), railways and large factories to give clean and shining look to the floors. Such treatment also guards the floor surfaces against damage by scratches under normal conditions of use.

These polishes usually contain appreciable quantities of natural and synthetic pigment colours such as, red oxide, green, blue, carbon black, black oxide and others. These pigments impart pronounced tinctorial and covering properties to the polishes.

These polishes are used on special surfaces such as red tiles, coloured door steps, window ledges, brickwork and floors where continuous replacement of the outer colour film is a more important consideration than the permanent polishing effect. For better results, the ingrained dirt and grease from the surface should be removed before the application of polish.

This standard was first published in 1972. Based on the technological advancements during the last two decades, this revision was taken up. In this revision keeping quality and clauses on packing and marking have been modified.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

AMENDMENT NO. 1 JULY 1993
TO
IS 6704 : 1992 PIGMENTED FLOOR POLISH, PASTE —
SPECIFICATION
(*First Revision*)

(*Page 3, clause A-4.1, line 5*) — Substitute 'contained in a porcelain crucible. Place' *for* 'preferably place'

(CHD 023)

Reprography Unit, BIS, New Delhi, India

Indian Standard

PIGMENTED FLOOR POLISH, PASTE – SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for pigmented floor polish, paste, used for polishing and colouring stone and cement surfaces, unglazed tiles and floors, door steps, window ledges, brickwork etc.

2 REFERENCES

The Indian Standards listed below are necessary adjuncts to this standard.

<i>IS No.</i>	<i>Title</i>
1070 : 1992	Reagent grade water — Specification (<i>third revision</i>)
1448 (Part 20) : 1982	Methods of test for petroleum and its products: Part 20 Flash point by Abel apparatus (<i>first revision</i>)
4905 : 1968	Methods for random sampling
8171 : 1992	Glossary of terms relating to polishes and related materials (<i>second revision</i>)
SP 1650 : 1973	Standard colours for building and decorative finishes

3 TERMINOLOGY

3.1 For the purpose of this standard, the definitions given in IS 8171 and the following shall apply.

3.2 Ambient Temperature

A temperature between 21°C and 38°C, unless otherwise specified.

4 REQUIREMENTS

4.1 Composition

The pigmented floor polish, paste, shall consist mainly of pigments, waxes, organic solvent with or without water and an emulsifier.

4.1.1 The polish shall contain no ingredients which may be injurious to health under normal conditions of use.

4.2 Odour

The polish shall have a pleasant odour before and immediately after application. It shall not have any disagreeable odour.

4.3 Colour

The polish shall be manufactured in shades of colours matching or nearly matching those prescribed in SP 1650 or as agreed to between the purchaser and the supplier.

4.4 Consistency and Stability

The paste polish shall be of smooth consistency and free from gritty material. It shall not flow at room temperature or show appreciable shrinkage at edges. It shall have no tendency for the separation of solvents or crystallisation of the constituents when tested as prescribed in A-1.

4.5 Polishing Properties

4.5.1 When applied by means of clean cloth, the polish shall spread easily and evenly. After natural drying of the polish film, it shall give with minimum of buffing, a glossy surface free from any greasiness or oily appearance.

4.5.2 The film of polish after spreading with cloth on coloured flooring, in thin layer shall not take more than 30 minutes to dry.

4.5.3 When applied in thicker layer using a brush or cloth to colour cement, stone and uncoloured floors, the polish shall not take more than 8 hours to dry.

4.5.4 Covering Power

The polish, when applied to ordinary uncoloured cement floor in thin layers with cloth, it shall not require more than three applications to fully cover the base.

4.5.5 The polished surface of the floor shall not be so slippery as to prevent comfortable walking.

4.6 Keeping Qualities

The polish shall not deteriorate in any manner inside the container (metal or plastic) and shall comply with the requirements of this specification for two years from the date of manufacture when stored in its original sealed container under cover at ambient temperature.

4.7 The polish shall also comply with the requirements given in Table 1.

Table 1 Requirements for Pigmented Floor Polish
(Clause 4.7)

Sl No.	Characteristic	Requirement	Method of Test (Ref to Annex A)
i)	Pigment content, per-cent by mass, <i>Min</i>	10	A-3
ii)	Softening point of Non-volatile matter, <i>Min</i>	60°C	A-4
iii)	pH of water extract	7-9	A-5
iv)	Flash point of organic solvent (Abel) °C, <i>Min</i>	30	IS 1448 [Part 20]

5 PACKING AND MARKING

5.1 Packing

5.1.1 The polish shall be supplied in suitable clean metal or plastic containers as agreed to between the purchaser and the supplier.

The surface of the polish may be covered using an aluminium foil or grease-proof paper. The containers shall comply with the tests as prescribed in A-2.

5.1.2 The containers shall be packed in lots into suitable cartons and the cartons in turn into wooden or cardboard boxes as agreed to between the purchaser and supplier.

5.1.3 The polish shall be supplied in 400 g container or as agreed to between the purchaser and the supplier.

5.2 Marking

5.2.1 The containers shall be marked with the following:

- Indication of the source of manufacture;
- Net mass of the polish when packed;
- Month and year of manufacture;
- Colour of the polish
- Directions for use; and
- Safety precautions, if any.

NOTE — Any other marking required under weights and Measures (Packaged Commodities) Rules 1977, may also be complied with.

6 SAMPLING

Representative samples for test shall be drawn as prescribed in Annex B.

ANNEX A

(Clauses 4.4 and 5.1.1, and Table 1)

METHODS OF TEST FOR PIGMENTED FLOOR POLISH

A-0 QUALITY OF REAGENTS

A-0.1 Unless specified otherwise, pure chemicals and distilled water (see IS 1070 : 1992) shall be used in tests.

NOTE — 'Pure Chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

A-1 TEST FOR CONSISTENCY AND STABILITY

A-1.1 Procedure

Place an unopened test sample in a flameproof oven maintained at $37 \pm 2^\circ\text{C}$, for 24 hours. Remove the container from the oven and place in shelf for 24 hours to attain ambient temperature. Open the container and draw approx. 50 g of polish and compare with the control sample kept at ambient temperature. The consistency shall be smooth as of the control sample and there should be no separation of solvent, pigments or crystallisation of waxes as seen visually and spreading on test tile. The above test to be repeated by placing the test sample in a refrigerator shelf maintained at $5 \pm 2^\circ\text{C}$.

A-2 TEST FOR CONTAINER

A-2.1 Procedure

Place an unopened test in a flameproof oven maintained at $45 \pm 2^\circ\text{C}$ for 8 hours. Remove the container from the oven. No leakage from side, top or bottom seam and cap should be apparent.

A-3 DETERMINATION OF PIGMENT CONTENT

A-3.1 Procedure

Weigh accurately about 5 g of polish into an extraction thimble. Place a plug of cotton wool previously extracted with petroleum hydrocarbon solvent (60/80) at the open end of the thimble, and transfer the thimble to a soxhlet extractor.

Extract with petroleum hydrocarbon 60/80 over water-bath for 6 hours. Remove the flask with extract and keep it separately. Remove the thimble, dry it in an air-oven at $105 \pm 2^\circ\text{C}$, cool and weigh.

A-3.2 Calculation

$$\text{Pigment content, percent by mass} = \frac{M_3 - M_2}{M_1 - M_2} \times 100$$

where,

M_3 = Mass, in g, of thimble with residue and cotton plug;

M_2 = Mass, in g, of thimble with cotton plug; and

M_1 = Mass, in g, of thimble with sample and cotton plug.

A-4 DETERMINATION OF SOFTENING POINT OF NON-VOLATILE MATTERS**A-4.1 Procedure**

Weigh accurately about 10 g of the polish in a flat bottom dish. Evaporate the solvent/volatiles on water bath to constant mass. Place a portion of the residue (approx. 50 mg) on the surface of a clean mercury, preferably place the crucible on a sand bath and hang vertically the thermometer and adjust its height in such a way that the bulb of the thermometer dips in the mercury. Heat the sand-bath slowly so that temperature rises slowly at a rate not exceeding 2°C per minute. When the

temperature reaches about 55°C, raise the temperature at the rate of 1°C per minute. Shift the material on mercury with the tip of ball-pin after every one degree rise in temperature. Note the temperature when the material on being shifted just leaves a slight stain. Note this temperature as the softening point.

A-5 DETERMINATION OF pH OF WATER EXTRACT**A-5.1 Procedure**

Add about 15 g of the material to 100 ml of distilled water in a beaker. Heat with stirring till all the wax has melted. Allow to cool to a temperature of $27 \pm 2^\circ\text{C}$. Separate the aqueous layer from the wax cake and determine its pH using a pH meter with a glass electrode

A-6 DETERMINATION OF FLASH POINT OF ORGANIC SOLVENT PORTION**A-6.1 Procedure**

Place about 400 g of the material in a suitable distillation flask and distil off the solvent in vacuum. Dry the distillate by shaking with anhydrous magnesium sulphate.

A-6.1.1 Determine the flash point of the distillate by the Method B of IS 1448 (Part 20) : 1982.

ANNEX B

(Clause 6)

SAMPLING OF PIGMENTED FLOOR POLISH**B-1 GENERAL REQUIREMENTS FOR SAMPLING**

B-1.0 In drawing, preparing, storing and handling test samples, the following precautions and directions shall be observed.

B-1.1 Samples shall be taken in a protected place not exposed to damp air, dust or soot.

B-1.2 The sampling instrument shall be clean and dry when used.

B-1.3 Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination.

B-1.4 The samples shall be placed in clean, dry and airtight glass containers or other suitable containers on which the material has no action.

B-1.5 The sample containers shall be of such a size that they are almost completely filled by the sample.

B-1.6 Each sample container shall be sealed airtight after filling and marked with full details of

sampling, the date of sampling and the year of manufacture of the material.

B-1.7 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

B-2 SCALE OF SAMPLING

B-2.0 To determine conformity of a consignment of pigmented floor polish to this specification, samples shall be selected so as to be representative of the whole consignment. In the absence of any prior agreement between the purchaser and the supplier on the mode of sampling and determining the criteria of conformity, the following sampling scheme is recommended to serve as a guide.

B-2.1 Lot

All the containers in a single consignment of a material drawn from the same batch of manufacture and of the same size shall constitute a lot. If a consignment is declared or known to consist of different batches of manufacture or of different sizes of containers, the containers belonging to

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the same batch and size shall be grouped together and each such group shall constitute a separate lot

B-2.1.1 Samples shall be tested for each lot for ascertaining the conformity of the material to the requirements of this specification.

B-2.2 The number of containers (n) to be chosen from a lot shall depend upon the size of the lot (N) and shall be in accordance with Table 2.

Table 2 Number of Containers to be Selected

Lot Size N	No. of Containers to be Selected n
(1)	(2)
Up to 500	20
501 to 1 000	25
1 001 and above	30

B-2.3 These containers shall be chosen at random from the lot (see IS 4905 : 1968). In order to ensure the randomness of selection, some random number table as agreed to between the purchaser and the supplier shall be used. In case such a

table is not available, the following procedure shall be adopted:

Arrange all the containers in the lot in a systematic manner and starting from any container, count them as 1, 2, 3, up to r and so on where r is the integral part of N/n . Every r th container thus counted shall be withdrawn to give sample for test.

B-3 PREPARATION OF COMPOSITE SAMPLE

B-3.1 Draw with a cork borer (internal dia about 2 cm) enough material so that the total quantity from all the containers is about 1 kg. Thoroughly mix below 45°C with a mechanical stirrer, all the portions collected so as to form a composite test sample.

B 4 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

B-4.1 Test for consistency shall be done on the original containers from which no sample has been drawn.

B-4.2 Tests for other characteristics shall be done on the composite sample.

B-4.3 The lot shall be declared as conforming to this specification if the test results satisfy the corresponding requirements.

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Doc : No. CHD 23 (0211)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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